Power Cost Equalization
A Primer and Look Back

House Energy Committee

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Looking back to 1977

Almost no transmission in Alaska

- Chugach electric owned a line from the Beluga gas field to Anchorage
- Fairbanks relied on local heavy oil and coal
- Diesel fuel was the primary energy source elsewhere

Very little hydropower

- Eklutna – 30 mw, serving ML&P, MEA, CEA
- Cooper Lake – 20 mw, serving CEA
- Snettisham – 52 mw, serving Juneau
- ~20 mw of small projects scattered throughout SE Alaska

Oil started flowing down the Pipeline

The State began to spend its newfound wealth

- A transmission line to Fairbanks was started
- The Susitna mega-project design was started
- The Bradley Lake project was started
- Kodiak, Valdez, Ketchikan, Wrangell and Petersburg began work on 4 hydro-projects
- Studies were commissioned to identify projects to reduce the cost of electricity throughout Alaska

The First Power Cost Assistance program

- Oil prices peaked in 1979
- Diesel-fueled utilities were hit hard
- Legislature established the Power Production Cost Assistance Program in 1980 – a one year stop-gap
- In 1981, the program was amended into the Power Cost Assistance Program, which was designed to self-extinguish in five years

And finally - PCE

- In 1984, consultants admitted defeat
  - There was no silver bullet for rural Alaska's electric needs
  - Small loads and small communities spread across thousands of miles could not be interconnected
- Legislature established Power Cost Equalization
  - PCA was rewritten as PCE – effective October 1984
  - Utilities using diesel to generate at least 75% of power in calendar year 1983 were eligible
  - Cost of power was to be equalized to the average of Anchorage, Fairbanks and Juneau – 8.5 cents per kwh
  - Costs above 52.5 cents were not covered
  - All users were eligible for the first 750 kwh used
  - Community Facilities received PCE on 100% of their usage

The Situation from 1985 - 2017

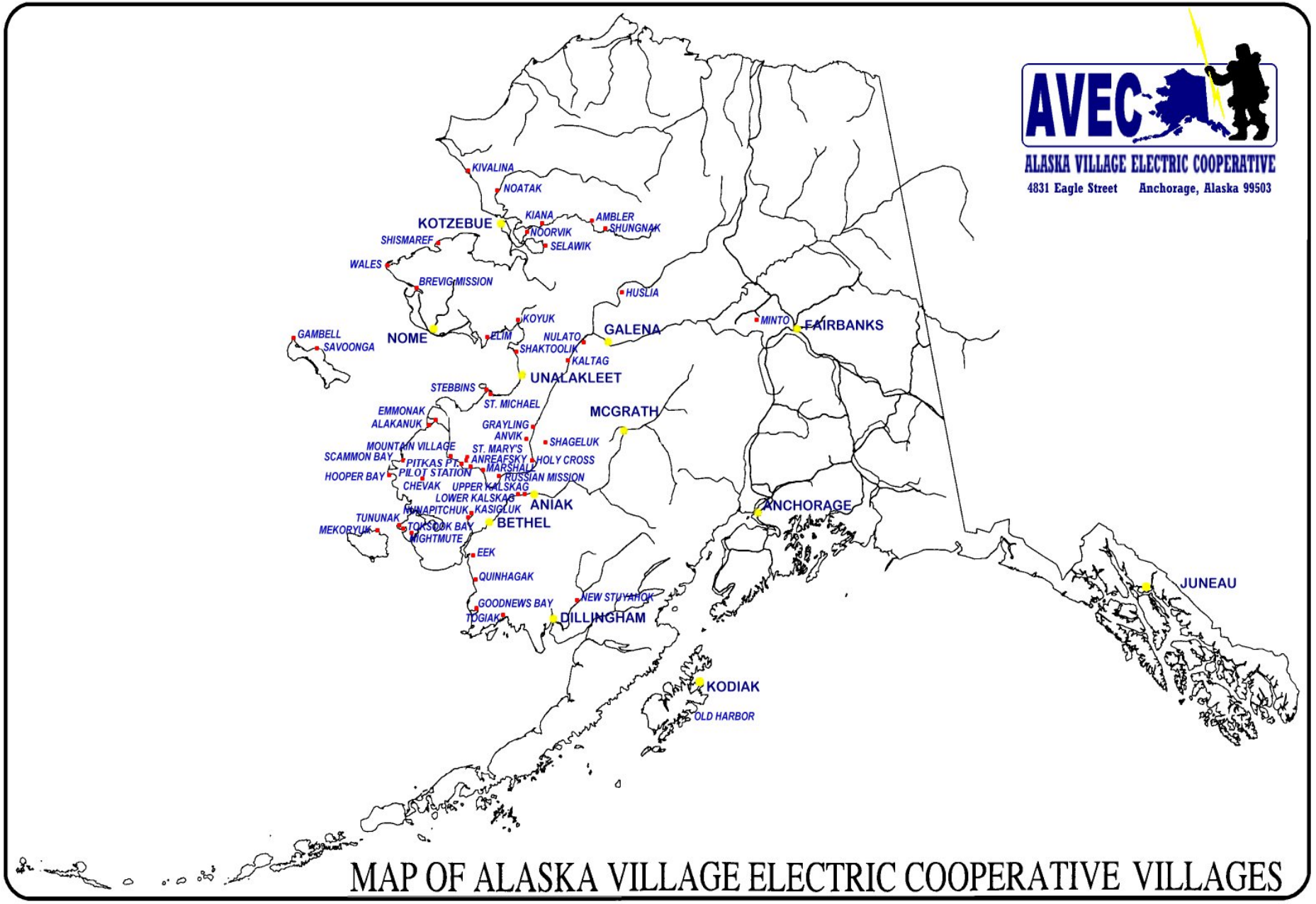
- The floor has been raised 124% to 19.02 cents
- The ceiling was raised from 52.5 cents to $1.00
- Eligible electricity has been reduced 1/3 to 500 kwh
- Only one meter per resident
- 6,000+ commercial customers no longer get PCE
- Fuel cost up 127% but efficiency is also up 32%
  - Fuel cost per kWh went from $.1033 - $.1875
- Non fuel costs per kWh are up 31%
  - $.1407 in ‘85 to $.1839 in ‘17
- Current funding ($28 million) is at 100% level
- PCE disbursed in FY86 $17.8 million
- PCE disbursed in FY17 $26.1 million

Program Costs since 2000

	2000	2017
Population served	77,625	83,850
Total Sales (gWh)	391	463
Eligible Sales	116	133
Percentage eligible	30%	29%
Average Fuel Cost/gallon	$1.10	$2.66
Fuel Consumed – million gallons	28	29
Fuel cost – millions	$30	$77
Non-fuel cost – millions	$42	$85
Total utility cost – millions	$72	$162
Total PCE – millions	$14.4	$26.1
Percent of total costs	20%	16%

About AVEC

- 58 villages (recently added Yakutat, Bethel)
- 32,000 population –
  - 38% of PCE population served
  - 41% of total PCE disbursed
  - Shageluk (smallest) 77
  - Bethel (largest) 6,224
  - Anchorage 294,356
- 92% Alaska Native



MAP OF ALASKA VILLAGE ELECTRIC COOPERATIVE VILLAGES

AVEC System Statistics

- 50 power plants
- 13 wind systems serving 20 villages
- 170+ diesel generators
- 500+ fuel tanks
- 8.5 million gallons fuel burned

2018 Overview

- 11,400 Services – residential and commercial
- 116 million kWh sales
- $52.4 million revenues
- $28.1 million Total Fuel Cost
- $25.4 million non-fuel cost
- 39¢ - Total revenue per kWh
- 397 kWh - Average residential usage per month
- 45¢ - Residential revenue per kWh
- Power Cost Equalization $10.7 million,
  - 21% of revenue, 41% of total PCE disbursed

Qn. #1 – Does PCE Reduce Rural Power Cost to Urban Levels?

Residential Power Cost per 2017 PCE Report

Chugach Electric	Anchorage	.1991
Golden Valley	Fairbanks	.2411
AEL&P	Juneau	.1189
Kodiak Electric	Kodiak	.1530
Kotzebue Electric	Kotzebue	.1939*
AVEC	56 Villages	.2300*
Bettles	Bettles	.3167*
MKEC	5 Villages	.4158*
Napakiak	Napakiak	.4888*

*after PCE

Cost of 700 Residential kwh

Anchorage	$139.37
Fairbanks	$168.77
Juneau	$83.23
Kodiak	$107.10
Kotzebue	$173.23*
AVEC Village	$219.00*
Bettles	$296.27*
MKEC	$421.12*
Napakiak	$409.40*

*After PCE

Qn. #2 – Who gets PCE?

- Every residential consumer
  - Only one meter per consumer
  - Only the first 500 kWh
- Community Facilities
  - Up to 70 kWh/resident per month
    - Streetlights
    - Washeterias
    - Water and sewer facilities
    - Community buildings

Qn. #3 – Who doesn't get PCE?

- Schools
- State facilities
- Federal facilities
- Commercial consumers
- Consumers with seriously delinquent accounts

Qn. #4 – How does PCE work?

- Utility applies to RCA to participate
- Utility submits detailed cost and operational data
- RCA determines eligible costs and computes PCE by rate class
- Utility bills customers per normal tariff rates
- Utility applies PCE credit based upon actual consumption (subject to kWh limit)
- Consumer is responsible to pay bill after PCE credit
- Utility bills state (AEA) for all PCE credited
- Utility provides AEA with detailed billing records
- Utility files annual update of costs with RCA, per schedule established by RCA

Qn. #5 – Doesn't PCE discourage Conservation & Innovation?

- Only 29% of all electricity sold in eligible communities receives PCE
- But the smaller the community, the more kwh that are eligible (because of minimal commercial usage)
  - Akiachak 46%
  - Aniak 37%
  - AVEC 48%
  - Cordova 28%
  - Kotzebue 27%
  - Napakiak 72% (School is on own generation)
  - Tanana 38%

Qn. #6 Doesn't Most of PCE go to "Overheads?"

FY17 Program Statistics

Fuel Costs	$76,759,457
Non-Fuel Costs	$85,141,895
Total Electricity Cost	$161,901,352
Total PCE Disbursed	$26,099,807
Percent of Fuel Costs	34%
Percent of Total Costs	16%

Qn. #7 What are "Overheads?"

They are all "non-fuel" costs.

- Operating and maintaining power plants
- Operating and maintaining tank farms
- Operating and maintaining distribution lines
- Connecting customers, billing, collections
- Administration, accounting, engineering, warehouse
- Insurance, depreciation, cost of long-term debt
- Taxes and miscellaneous

AVEC's Non-fuel Costs - 2017

Generation Ops & Maintenance	10.0
Distribution O&M	1.3
Customer accounts	1.5
Administration, Insurance	3.2
Depreciation	3.2
Interest on LTD	1.1
All other + margins	0.5

Total	20.8 cents/kWh
Fuel	21.9 cents/kWh

Qn. #8 – Do PCE Villages have any Plant Investment?

- Generally speaking, investment per customer served is actually higher in rural Alaska (2007)

Utility	Total Plant	Per Customer
AEL&P	101,728,884	6,635
Chugach Electric	773,762,915	9,981
Golden Valley	434,881,925	10,563
Kodiak	84,698,822	14,839
Kotzebue	16,203,807	13,526
AVEC	108,496,970	14,404
($2,047,113 per village)		

Qn. #9 – Isn't PCE Abused?

There are strict requirements of RCA and AEA

- Line Loss standards – 12%
- Only one eligible account per customer
- Various expenses (like lobbying) disallowed
- Monthly reports must be submitted to AEA
- Community Facilities are scrutinized by AEA
- Revenues billed must be collected
  - AVEC writes off less than .005% annually in bad debts

Qn. #10 – Would PCE Money be better spent on Alternative Energy?

Wind generation is 6 times the cost of diesel generation

- We cannot use 'utility grade' turbines as in Lower 48
- Average village load is ~150 kw
- There are only 1 or 2 manufacturers of 50-100 kw units
- To accommodate sophisticated integration needs, the existing generation and distribution must be upgraded
- Typical cost of a 300kW integrated project $4+ million
- Diesel generation and fuel tankage still needed for the 70%+ energy that wind cannot provide
- AVEC has recently installed two 900kW turbines

Qn. #11 Why are we subsidizing Rural Alaska?

Because this was the compromise reached in 1984, when the Legislature recognized that there was no answer to bring affordable power to rural Alaska, even as billions of dollars were being spent or committed to reduce power costs for urban Alaska and communities fortunate to have access to hydropower

Thank you!

Presented by Meera Kohler

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